

**AMENDMENTS TO THE CLAIMS**

1. (Currently Amended) An inter-network connection system comprising:

IP layer switching means for switching an arrival frame to a predetermined route according to an IP table in which a physical transmission path and a logical channel corresponding to an IP address are recorded; ~~and~~

MAC layer switching means for switching an arrival frame to a predetermined route according to a MAC table in which a physical transmission path and a logical channel corresponding to a MAC address are recorded, wherein a plurality of physical transmission paths are arranged between the IP layer switching means and the MAC layer switching means[.];

the IP table includes means for, each time a frame from the MAC layer switching means arrives, updating self-table contents according to the IP address of the frame and the information of a physical transmission path and a logical channel through which the frame passes[.];

the MAC table includes means for, each time a frame from the IP layer switching means arrives, updating self-table contents according to the MAC address of the frame and the information of a physical transmission path and a logical channel through which the frame passes[.];

means for detecting fault generation of the plurality of physical transmission paths ~~is arranged~~[.]; and

means for updating the IP table such that a physical transmission path in which a fault is detected according to the detection result is bypassed.

2. (Original) An inter-network connection system according to claim 1, ~~wherein~~  
further comprising:

the IP layer switching means includes means for transmitting normality  
acknowledge signals passing through the plurality of physical transmission paths to the  
MAC layer switching means[.];

the MAC layer switching means includes means for transmitting response  
signals of the normality acknowledge signals through physical transmission paths at  
which the corresponding normality acknowledge signals arrive[.]; and

the means for detecting fault generation includes means for checking the  
normality of the physical transmission path depending on the presence/absence of the  
response signal.

3. (Currently Amended) An inter-network connection system comprising:

IP layer switching means for switching an arrival frame to a predetermined  
route according to an IP table in which a physical transmission path and a logical channel  
corresponding to an IP address are recorded; ~~and~~

MAC layer switching means for switching an arrival frame to a predetermined  
route according to a MAC table in which a physical transmission path and a logical  
channel corresponding to a MAC address are recorded, wherein a plurality of physical  
transmission paths are arranged between the IP layer switching means and the MAC layer  
switching means[.];

the IP table includes means for, each time a frame from the MAC layer switching  
means arrives, updating self-table contents according to the IP address of the frame and

the information of a physical transmission path and a logical channel through which the frame passes[.];

the MAC table includes means for, each time a frame from the IP layer switching means arrives, updating self-table contents according to the MAC address of the frame and the information of a physical transmission path and a logical channel through which the frame passes[.];

means for measuring the traffics of the plurality of physical transmission paths is arranged[.]; and

means for updating the IP table such that a physical transmission path in which a traffic volume exceeding a threshold value is detected according to the measurement result is bypassed.